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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,740	05/18/2005	Markus Heckel	4855/PCT	9436
21553	7590	06/26/2006	EXAMINER	
FASSE PATENT ATTORNEYS, P.A.			AMRANY, ADI	
P.O. BOX 726			ART UNIT	
HAMPDEN, ME 04444-0726			PAPER NUMBER	
			2836	

DATE MAILED: 06/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/535,740	HECKEL ET AL.	
	Examiner	Art Unit	
	Adi Amrany	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 6-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 6-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicants' arguments (filed May 9, 2006), with respect to the rejection of claims 1-2 and 6-8 under 35 U.S.C. 103(a) over applicants' prior art in view of Belau (US 6,448,784) have been fully considered and are persuasive.

The examiner interprets Belau as disclosing a charging connection comprising a resistor and a transistor switch that is capable of discharging a capacitor and testing the discharging current. Although Belau only discloses a single energy storage capacitor, the reference was used as prior art to establish the charging connection. Applicants' admitted prior art ("APA") discloses the dual capacitor system comprising each of the components (except for the charging connection) as recited in claim 1. APA discloses that the system-autonomous capacitor discharges into the function-autonomous capacitor. It is not necessary to find this discharging path in Belau.

The Belau method, however, requires that the capacitor must be substantially discharged before the switch is closed. The charging connection is thereby testing charging current from the current source rather than discharging current from the capacitor. Belau does not suggest that the method is controllable in two special operating states; as a switch for clocking the charging current that charges the function-autonomous capacitor and is controlled to produce a constant discharging current for testing the system-autonomous capacitor and for producing a re-charging current for re-charging the function-autonomous capacitor.

Therefore, the rejection has been withdrawn. However, upon further consideration, new grounds of rejection is made in view of the disclosures of Ochiai and Yamada, as discussed below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (figure 2, APA), in view of Ochiai (US 4,709,200).

With respect to claim 1, the method for operating an electronic module would have been obvious over the apparatus disclosed in the prior art, in view of the power source circuit disclosed in Ochiai.

APA discloses the elements that are to be combined to form applicant's method. The prior art discloses an operating voltage source (Ubat) for supplying the module with electrical energy, a circuit unit (3) for carrying out a function, a system-autonomous capacitor (item Cs) for supplying energy to the circuit unit in the event of an operating voltage interruption, a function-autonomous capacitor (item Cz) for supplying reserve energy, and a voltage converter (item 1) for charging the system autonomous capacitor (Cs).

APA does not expressly disclose that the function-autonomous capacitor is connected to the voltage converter and to the system-autonomous capacitor by means of a charging connection (figure 1, item 5), and that the charging connection is controllable in the following operating states:

as a switch for clocking the charging current charging the function-autonomous capacitor, and

as a controllable resistance for producing a constant discharging current for checking the system-autonomous capacitor and for producing a re-loading current for re-loading the function-autonomous capacitor.

Ochiai discloses the function-autonomous capacitor (figure 1, item CL; column 2, lines 44-55) is connected to the system autonomous capacitor (figure 1, item Cs; column 2, lines 36-44) by a charging connection (figure 1, items 4-6; column 2, lines 36-55), and in that said charging connection is controllable in the following operating states:

a) as a switch (figure 1, item 9; column 3, lines 49-63) for clocking the charging current that charges the function-autonomous capacitor; and

b) as a controllable resistance for producing a constant discharging current for testing the system-autonomous capacitor (figure 1, item 5; column 3, lines 37-48) and for producing a re-charging current for re-charging the function-autonomous capacitor (column 3, lines 51-57).

Ochiai discloses a two-capacitor system to act as a backup in the event of a power source failure. The first capacitor (system-autonomous) supplies

recharging current to the second capacitor (function-autonomous). The load is operated until the charge of the first capacitor falls below a threshold.

APA and Ochiai are analogous because they are from the same field of endeavor, namely electronic modules supplied by a power source through a circuit comprising a charge capacitor and a storage capacitor.

At the time of the invention by applicants, it would have been obvious to one skilled in the art to combine the elements of applicant's prior art with the charging connection disclosed in Ochiai and to operate the combination as recited in the method of operating an electronic module.

The motivation for doing so would have been to control the re-charging of the function-autonomous capacitor, which is required for stable and reliable operation of the electronic module (load) in the event of a power source failure.

With respect to claim 2, APA and Ochiai disclose the method according to claim 1, and further disclose the testing of the system-autonomous capacitor comprises discharging the system-autonomous by the discharging current into the function-autonomous capacitor (APA; figure 2, items Cs, 2, Cz) (Ochiai; figure 1, items Cs, 6, CL). Both APA and Ochiai disclose that the current of the system-autonomous capacitor is discharged into the function-autonomous capacitor.

With respect to claim 7, APA and Ochiai disclose the method according to claim 1, and APA discloses that an up-converter is used as said voltage converter (figure 2, item 1; page 1, lines 19-20 [based on actual line count]).

With respect to claim 8, APA and Ochiai disclose the method according to claim 1, and APA discloses use of the method according to claim 1 in a motor vehicle control device with a power module (figure 1, item 3) as said circuit unit for triggering a vehicle collision safety device, wherein the event of the operating voltage interruption the system function comprises the provision of the energy reserve as an ignition energy for said vehicle collision safety device by the function-autonomous capacitor serving as an ignition-autonomous capacitor (page 1, line 19 to page 2, line 10 [based on actual line count]).

4. Claims 1-2 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA, in view of Yamada (US 6,777,912).

With respect to claim 1, APA discloses the apparatus necessary to complete the recite method, but does not expressly disclose the charging connection, as discussed above.

Yamada discloses the function-autonomous capacitor (figure 1, item 8; column 3, lines 28-30) is connected to the system autonomous capacitor (figure 1, item 12; column 3, lines 59-67) by a charging connection (figure 1, item 25; column 4, lines 18-31), and in that said charging connection is controllable in the following operating states:

- a) as a switch (figure 4, switch adjacent to item 30) for clocking the charging current that charges the function-autonomous capacitor; and
- b) as a controllable resistance for producing a constant discharging current for testing the system-autonomous capacitor (column 4, lines 25-31) and

for producing a re-charging current for re-charging the function-autonomous capacitor (figure 1, connection between items 12, 14, 7, and 8).

Yamada discloses a capacitor bank (system-autonomous) that is charged during operation of the vehicle engine. A charging connection controls the discharging of the capacitor bank to supply current to the auxiliary electric power storage device (function-autonomous), via a DC/DC converter (figure 1, item 7). Charge stored in the auxiliary storage device is used to power the auxiliary machine (figure 1, item 9). Also see figure 7, column 1, lines 21-44.

A person of ordinary skill would recognize that the auxiliary machine in a hybrid vehicle comprises electronic devices within the vehicle, including the breaks, airbags, or other safety features.

APA and Yamada are analogous because they are from the same field of endeavor, namely a power supply system for a vehicle comprising two energy storage devices.

At the time of the invention by applicants, it would have been obvious to a person of ordinary skill in the art to combine the elements of applicant's prior art with the charging connection disclosed in Yamada and to operate the combination as recited in the method of operating an electronic module.

The motivation for doing so would have been to control the re-charging of the function-autonomous capacitor, which is required for stable and reliable operation of the electronic module (load) in the event of a power source failure.

With respect to claim 2, APA and Yamada disclose the method according to claim 1, and APA further discloses the testing of the system-autonomous

capacitor comprises discharging the system-autonomous by the discharging current into the function-autonomous capacitor (figure 2, items Cs, 2, Cz). APA discloses that the current path of the discharge current of the system-autonomous capacitor leads to the function-autonomous capacitor.

With respect to claim 6, APA and Yamada disclose the method according to claim 1, and further, Yamada discloses the charging connection comprises at least one transistor element (figure 4, item 28; column 4, lines 25-27) and a resistance (figure 4, item 30; column 4, lines 25-27) series-connected to said transistor element.

With respect to claim 7, APA and Yamada disclose the method according to claim 1, and APA discloses that an up-converter is used as said voltage converter (figure 2, item 1; page 1, lines 19-20 [based on actual line count]).

With respect to claim 8, APA and Yamada disclose the method according to claim 1, and APA discloses use of the method according to claim 1 in a motor vehicle control device with a power module (figure 1, item 3) as said circuit unit for triggering a vehicle collision safety device, wherein the event of the operating voltage interruption the system function comprises the provision of the energy reserve as an ignition energy for said vehicle collision safety device by the function-autonomous capacitor serving as an ignition-autonomous capacitor (page 1, line 19 to page 2, line 10 [based on actual line count]).

Conclusion


5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Gogolla (US 2001/0045814) discloses a charging connection, between a charge capacitor and a storage capacitor, comprising a switch and a regulator to control the flow of current from the charge capacitor to the storage capacitor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adi Amrany whose telephone number is (571) 272-0415. The examiner can normally be reached on weekdays, from 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AA


BURTON SMULINS
PRIMARY EXAMINER